

Application No. 09/876,160
Amendment dated September 30, 2005
Reply to Office Action of June 2, 2005

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REMARKS

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Claims 1, 2, and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,491,697 to Tanaka et al., in view of U.S. Patent No. 4,43,666 to Cote and further in view of U.S. Patent No. 6, 084,972 to Halteren et al.

Claims 9-13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanaka et al., in view of Cote as applied to claims 1, 2 and 8, and further in view of U.S. Patent No. 6,104,818 to Korner and Halteren et al.

Claims 1, 3, 4, 5, 6, 7, 8, and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Korner in view of Cote and further in view of Halteren.

In order to clarify the gist of the present invention, new claim 14 is written on the basis of not only the features of previous claims 1 and 4 but also some other structural features of the second amplification means which are readable from the drawings. In the same manner, original claims 1 and 5 are written into new claims 15, original claims 8 and 4 are written into new claims 16, and original claims 8 and 5 are written into new claims 17. However, the structure of the shielding member has been omitted from those independent claims and added as dependent claims, because it is considered an additional dependent structure.

Original claims 1, 4-6, 8-13 have been canceled to avoid duplication of claims.

Claims 2, 3, 7, 14-25 are still pending in the present application.

The object of the present invention is to reduce or suppress an RF signal impinging onto the microphone so that audible noise resulting from the RF signal impinging onto the microphone via both the microphone signal output line 31 and the output terminal 22, which is especially from a transmitter of the radio apparatus, is suppressed or reduced (the specification, page 2, line 30-34).

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In order to accomplish such an object, the present invention employs circuitry including a bypass capacitor and a cascaded second amplification means (circuit). In particular, the impedance conversion of the second amplification means can be used in combined manner with the functions of the bypass capacitor.

The present invention provides circuitry structures in which the bypass capacitor and the second amplification means (circuit) are most effectively connected around the output line which is susceptive to impingement and flow of an RF signal, that is, noise.

More specifically, as shown in Fig. 1, there is provided the FET 25 (the second amplification circuit) cascaded to the FET 15 (the first amplification circuit). The combination of the FET 25 with the FET 15 functions as a reducer for the RF noise (the specification, page 7, lines 16-32). In addition, there is provided the bypass capacitor 21 placed immediately after the output line 31. Thus the RF signal is first (i.e., mainly) reduced (bypassed) by the bypass capacitor 21, and then reduced through the impedance conversion carried out by the FET 25. This accomplishes a two-step RF-noise suppression electric circuitry against the RF noise, in which the impedance conversion carried out by the FET 25 will help or strengthen, to a large extent, the noise suppression performed by the bypass capacitor 21.

For example, both the bypass capacitor 21 and the FET 25 can be assigned to different frequencies, so that the coverage of the RF noise suppression can be widened. Alternatively, both of the bypass capacitor 21 and the FET 25 can be assigned to the same frequency, which strengthens the noise suppression at the frequency.

Of course, the shielding member (the casing 13) is effective for strengthening the resistance against external RF noise.

In contrast, Tanaka et al. (4,491,697) and Korner (6,104,818) both disclose condenser microphones, but they fail to teach countermeasures against RF noise. Tanaka et al only discloses an impedance conversion by using FETs.

Thus, there are no teachings or suggestions for employing the impedance

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conversion to prevent the RF noise entering the microphone through the output line. That is, in Tanaka et al. and Korner, there are no teachings or suggestion concerning the circuitry as to how effectively connect the bypass capacitor and the second amplification means (circuit) to the output line.

Cote (4,443,666) discloses a shielding structure against external electromagnetic waves (noise), but fails to teach or suggest an electrical suppression technique against such external electromagnetic waves. In addition, Halteren et al. discloses a bypass capacitor, but fails to utilize the impendence conversion provided by the second amplification means (circuit) in a combined manner with the bypass capacitor.

Therefore, it is submitted that Tanaka et al., Korner, Cote, and Halteren et al. fail to teach or suggest, solely or in a reasonably combined manner, the concept of electrically suppressing external electromagnetic noise using a relatively simplified configuration of the bypass capacitor, second amplification means and output line. The references provide no motivation to combine the structures provided by Tanaka et al., Korner, Cote, and Halteren et al. by one of ordinary skill in the art.

Therefore, it is respectfully submitted that all of the claims currently pending in the present application are in condition for allowance.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

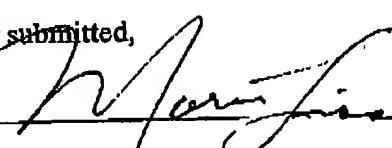
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The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185, under Order No. 20402-00625-US from which the undersigned is authorized to draw.

Dated: September 30, 2005

Respectfully submitted,

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